

ABSTRACT

The invention provides a substrate conveyer robot that enables the conveyance, handover and takeout of a substrate, to and from a container disposed in an arbitrary position and direction within the accessible range of the robot hand. The substrate conveyer robot is provided with the rotation base driven to rotate by a first motor inside the body of the robot, which has a pivotal center. A first spindle is protruded in a state indifferent to a rotation of the rotation base, which is positioned coaxially with the pivotal center on an upper part of the rotation base, and is driven to rotate by a second motor, and one end of a first arm is attached to the first spindle. A second spindle is protruded on the other end of the first arm in a state indifferent to the rotation of the first arm, which is rotated by a gear rate 2 : 1, accompanied with the rotation of the first arm, and one end of a second arm is attached to the second spindle. A third spindle is protruded on the other end of the second arm in a state indifferent to the rotation of the second arm, which is rotated by a gear rate 1 : 2, accompanied with the rotation of the second arm, and a distance between the first spindle and the second spindle is equal to a distance between the second spindle and the third spindle. One end of a third arm is attached to the third spindle, and a hand for holding a substrate is firmly attached on the other end of the third arm. Also, a control device is provided which controls the rotation angle θ of the rotation base and the rotation angle ϕ of the first arm in such a manner that the center point of the substrate held by the hand, deviating from the pivotal center by a constant distance h , moves linearly to the body of the robot on the straight line in an arbitrary direction within an accessible range of the hand, and the substrate is handed over and taken out to and from the container, while the substrate is being rotated.